

Ira Sawyer.

July Note Book, 1881

loc no.

July

1200

Montago Co. NY

1201

Capeville

1202

Basco

1203

Preble

1204

Veaper

1205

Fabius

1206

Pickett

1207

Truman Park

1208

Wrighton

1209

Cuyler

1210

De Ruyter

1211

Nelson

1212

Georgetown

ANDRUS & CHURCH,
Booksellers, Stationers,
Printers & Binders,
No. 41 E. State Street,
ITHACA, N. Y.

1870
Jan 1st
To Cash on hand
100 00
By Balance forward
100 00
Total 200 00
Feb 1st
To Cash on hand
50 00
By Balance forward
50 00
Total 100 00
Mar 1st
To Cash on hand
25 00
By Balance forward
25 00
Total 50 00
Apr 1st
To Cash on hand
12 50
By Balance forward
12 50
Total 25 00
May 1st
To Cash on hand
6 25
By Balance forward
6 25
Total 12 50
Jun 1st
To Cash on hand
3 12
By Balance forward
3 12
Total 6 25
Jul 1st
To Cash on hand
1 56
By Balance forward
1 56
Total 3 12
Aug 1st
To Cash on hand
0 78
By Balance forward
0 78
Total 1 56
Sep 1st
To Cash on hand
0 39
By Balance forward
0 39
Total 0 78
Oct 1st
To Cash on hand
0 19
By Balance forward
0 19
Total 0 39
Nov 1st
To Cash on hand
0 09
By Balance forward
0 09
Total 0 19
Dec 1st
To Cash on hand
0 04
By Balance forward
0 04
Total 0 09
Total 200 00

bottom of the second to the
bottom of the third is 6 feet
and five inches; and from
the bottom of the third to
its top is 8 feet and 2 inches
making in the aggregate

²⁰
~~7~~⁷/₄ feet. ⁰
Dip $\approx 1\frac{1}{2}$ - exact average.
The first section, 5' + 5", is a dark
colored shale at the bottom,
slightly calciferous, but becoming
gradually more and more
calciferous, until, at the top
it has all the characteristics of
the Gully Limestone.

The second section, 6' + 5", though
in quite a compact stratum
has, in weathering, an appear-
ance of being thin-bedded. It
seems scarcely fissile along planes
of stratification.

Some blocks along the mill
branch, indicate planes of

Stratification.

The third section, 8° E, is broken and ~~shaly~~. It is somewhat more calciferous than Section No. 1.

The main Limestone, on a fresh surface, is a drab-grey. On a weathered surface, it is very light blue and smooth.

The upper stratum has some portions that weather into a dark argillaceous soily mass, with sometimes a solid calciferous centre. Further N. the local *Dactylina* portion is cherty. Local

Through all parts are seams highly fossiliferous.

Chonetes are abundant through all parts. *Atrypas*, *Spinifers*, some *Lamellibranchs*, *Crinoids*, *Zaphrentes*, and *Lingulae*.

About fifty yards down the branch, is an exposure of the upper Hamilton Shales, full of fossils.

I have nowhere yet seen the Genesee Shales above.

Since writing the above, I find them abundant just west of this exposure.

Δ 1200

About fifty yards down the branch, is an exposure of the upper Hamilton Shales, full of fossils. Color ash gray.

I have nowhere yet seen the Genesee Shales above the Limestone. They are here.

1200 A loose are manifestly from the upper part of the middle section.

1200 A 1 are from section No 1, at or within the lowest 18 inches.

1200 A 2 are from the top of section No 2.

1200 A 3 are from the middle of section No 3.

Tully, ⁵Orandaga Co., N. Y.
Monday, August 20, 1888.

A 3 from 17 to 20 feet above base.

A-1 About 25° below A₁,
and sayards down the little
spring branch.

This is the Upper Hamilton
Shales.

Section of Tully Limestone
in the
Gardiner Glen Exposure
Hill above.

8' + 2' Broken

6' + 5' Solid Limestone

3' + 5' Base.

Hamilton Shales

High Rocks

High Rocks

Section at
Strail's ~~Shale~~
Genesee Shales.

Branch

555

555 1 Trilobite

20' 4'

555

555

4' 2" Limestone

10' Shale

3' 2" Base of Limestone

Shaly, about a foot

5' 8" Hamilton Shales

Hamilton

Shales

6
Tully, Oneida Co., N. Y.
Tuesday, August 21, 1888

12.00 B. About 2 miles
north of Tully Station,
on the very top of the ridge
which begins at or very near
the Clayton Hotel, is a
sharp comb of the ridge.
This comb is the Tully
Limestone. Still there is
almost no exposure here.
A short distance off the
northern end of this, is a
very large mass of the rock
nearly in situ, a little
tilted. It belongs to the
middle section of the
rock, at A., and contains
on its upper surface,
several Zaphrentes.
In other places, I have seen
Zaphrentes in this rock.

August 21, 1888.

This Limestone forms the bedrock for over a mile on the top of ridge. The road ^{reaches} ~~crosses~~ the Limestone on the line between the ^{Wm} Scheels and Whillaga farms.

This morning, I have seen thousands of Zaphrentids, and two Favosites. Broken Orinoid Stems frequently constitute the main mass of this Limestone.

Afternoon.

I continue tracing this stone north to the south line of Wm Jones' farm, where the road descends from the top of the limestone fully forty feet to the Hamilton Shales about 30 rods south of Mr Jones' house.

August 21, 1888.

I find the topmost stratum of this rock to be a calciferous Quartzite, about 24 to 30 inches thick. The under side almost pure Limestone, the uppermost scale is the black Genesee Shale.

It is quite fossiliferous, containing Zaphrentoids, and Atrypae, &c. &c.

The Limestone, when under soil, and the Quartzite grains have so little cohesion, the rock is easily broken down.

Its primary color is sky blue. Its first change is to a ^{orange} ~~yellow~~ resulting from iron. It ultimately becomes amber brown.

August 25, 1905

My excursion today was to
see the little view of the
geological relation to the
top of the reef.

But it shows very clearly, by
its structure, the successive
of the sea bottom on which
it was formed. The strata
of fifty feet or more
up to the base of the reef.

The Terrace Shale has
been cut into many low
hills. The strata of
the reef are much more
nearly to the top of the reef.

Even so, the fossils are quite
Grapholites, Pecten, Pectenoides,
Camarotoechia, and the like. The
most prominent.

Bully, Onondaga Co. N.Y.
Thursday Aug. 23, 1900
12.30 P.M.

On the ridge south of
Canfield, on farm owned by
the same Shales on the
highest knobs, and
Bully Limestone on a slope.
Variation in altitude of
not less than 100 feet.
On the lot east of the farm
house are Bully Limestone
in situ.

On the lot east of Samuel
Purphy's house is a large
rock, Bully Limestone on
one side, and Carboniferous
sandstone on the other.
There is a significant
difference in the position

In the p.m., I gathered
specimens from a point
in a spring about east
of Lull's station.

The thickness here is
about 20' thick.
Dip 81° E. 118 ft.
1200 feet to the base
of the Lull station as
approx. base.

1200 feet is the very top
of Hamilton Shale.
6, 4 & 3 are in great
abundance in the
lower part of the

Monday, August 13, 1906
Collected fossils at the
Springfield Hall, east of
Springfield, Mo.

1906. About 1 foot
above the base of the
strata.

about 20 to 25 feet
above the base.

This layer is made
of white, very fine
sandstone.

Small, light-colored
fossils about 1/2 inch
long, and 1/4 inch
wide, and 1/4 inch
thick, and 1/4 inch
high.

Fossils are in
the sandstone, and
are made of the same
fish, small?

July, Monday, August 1st
Saturday, August 2nd, 1888.
I found the head of a large
trilobite in the sand, about
60 feet up the stream, above
the fall, and about 23 above
the base of the Limestone.

In the afternoon, I examined
three outcrops, 1 1/2, 1, & 2 miles
north of F. C.

The first is the upper
section of the main phylloids
at the mouth of the river.
The second is the phylloids
the base of the trilobite.
This is not a far distance
from the first, but in the
middle section the bed
off under a massive sandstone
of about 1/2 an acre.
I observed the common
fossils of the bottom of

Full Limestone top of ridge

10

20

Bridge

Germans Glades

Full lime in the hill

Read to La Fayette

Geological on ridge

30

Full Limestone

Full Limestone

Full Limestone

Full Limestone

The middle section, and some of the 3 sections, in the broken north side the second exposure, is with east on the east of the road the house on the east side of Lexington. is somewhat higher than the same rock line on the west side of the road. not less than 25 higher. This shows a decided flexure from east to west.

I could not get the dip at any of the places. Inequalities in level, can be accounted for in no other supposition than irregularity of the main bed.

Tully, Onondaga Co., N. Y.,
Monday, August 27, 1895.
Examined John C. Coby's
place, outcrop.

1200 J.

Dip 0. Over 25 feet
thick, as per Level
Rock is exposed in
hilly falls, towards north.
Towards top, shaly, black
Calcareous Argillite.

In the p.m., I determined the
outcrop on Meeker Hill, about
on the north line of Lot 20, and
terminated about 100 rods from the
town line, on Lot 90 & 91. I found
here a deep mass of a terminal
moraine, filled with northern drift
together with Tully Limestone
just scraped from its bed to
rest on the moraine.

1200 E from Meeker Hill outcrop
Lot 10, Tully.

Lilly, Onondaga Co., N. Y.
Tuesday, August 29, 1887.

I go to Cardiff, and do not
find Lilly Limestone in situ
as far as I can see.

1201 A. Lilly Valley, Lot 87.

La Fayette, on the farm of Mr.

Estey. It was not a
Limestone in the midst of
Upper Hamilton Shales.

1201 B. Lot 88, Cayuga Co., N. Y.

Southwest corner, about
one mile east of Clark
Estey's house.

Lilly Limestone does not
appear in force on this hill,
which faces south; but
Lilly Limestone appears
on the surface, and is
there.

40 feet below the position of
the preceding note, among the thick

120151

Here, a few feet further down the hill, we find the Lulley Limestone in force, a full 100 feet below the top of the ridge; on the north bank of Taylor's Creek.

One of the upper rocks, we find many *Filicites*.

12016 About 150 feet lower, is a fall in Taylor's Creek about 50 feet.

This rock resembles, very strongly, the lower section of "Lulley Limestone" and is about 100 feet thick.

The entire aspect of the rock in situ 25 feet above the upper rock in the falls, is that of the lower section of Lulley Limestone, but it is fully 150 feet lower than the Lulley found above.

Its present channel through
the river since was cut by
man.

In the morning we started for the
 south and the first of the
 day we found a very heavy
 bed of talcum powder. This
 is a very fine sand

The boring was carried on
in a small place, nearly a
square 45 feet, when the
strata were found to sand
away, then cut to a
smaller circle the drill was
run up to the
The top of the moraine is
40 feet above Syracuse.
From the top down to the
top of the hole is about
thirty hundred feet.
So the bottom of the hole
is still 25 feet above
Syracuse.

Lully, Onondaga Co., N.Y.
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top of the hole is about
thirty hundred feet.
So the bottom of the hole
is still 25 feet above
Syracuse.

remains of the appearance
of the lower part of the
Limestone.

This gorge is not a
great valley, and
has been the scene of
glacial action.

1201 E are from the bottom
of this gorge, about half
way from the mouth.

23-

Saturday Sept 11, 1909

Windy - much all day -

In a good part of the day

for - *Staphylinidae* - *Staphylinidae*

of *Staphylinidae* -

12:45

1:30

1:45 - *Staphylinidae*

About 2:30 - *Staphylinidae* -

the only *Staphylinidae* in the night

in the *Staphylinidae* - with

large -

24. Fully
developed, Sept. 6, 1900.
The third development
1200 ft. to 1300 ft.

25.
Fully developed, Sept. 7, 1900.
The third development
1200 ft. to 1300 ft.

1200 ft. }
1200 ft. 2+ } p. m.
1200 ft. 3+ }

As + 20 ft. to the bottom of
the upper. The bottom
then is not apparent
in sites 3 and 4. In sites
the same near the top
I recognize them. They are
in a well just above the surface.

25. Tulla
Wednesday, Sept 7, 1905
1200 F. 1/2 mile S. of
P.O., lower below trail all
of the road side.

1200 G. fall in lot (21) - 5
Thickness 45 feet

1200 G. lower in stream below

1200 G. is the best exposure
I have seen for studying
the structure of this rock.
It is completely exposed
even to the very top.

The uppermost stratum
is a calcareous Argillite,
very firm - little known.

Colts, Co. 3rd Regt Pa., N. M.
Sunday, September 7, 1890

I visit Bear Mountain, just
east of Maple Grove Church.
A long exposure on the ridge
top is S. There is another sudden
and remarkable depression of this
limestone. Along the east side of
the ridge Bear Mountain top, is the
eastern edge of the escarpment.
Proceeding northward, it drops about
40 feet, and proceeds about 100 feet
to the west. On the west side the
depression is not noticeable.
In striking the level east, this
exposure is exactly as high as the
crest of Pompey Hill, and more
than 100 feet higher than the exposure
east of Cardiff.
West of Maple Grove Church, on
the ridge, a long exposure from
Maple Grove to another long exposure
at the west end of the ridge.
The exposure is about 100 feet long.

25.

On Lot 86, south of the road
along side of the stream a deep
and impenetrable gorge is an
exposure in the north face of
the hill south of Bear Mountain
12026. This escarpment runs
along the east face of the
ridge, looking down into Little
Valley - Christian Hollow.

24
Lully, Minnesota, U. S. B.
July 25, September 1900.
I visit an exposure of
Lully Limestone, near
the head of Emersons
Creek, Otter, and lot
near the house of John
Kehrer.

An exposure of the
upper bed is about
20 to 25 feet above base.
1203 D.

1/2 mi. S. of head of Emersons
Creek, Lully is north this
is the most extensive exposure
of Lully Limestone I
have anywhere found. The
exposure is long and,
in some places, the rock
is bare for miles. It has
been washed by running
water, though it is in

to 100 feet above the
valley. 7500 years ago
it was the valley bottom.

This is the least length of
time I can make for
the removal of 100 feet
from this valley.

It is, probably, much longer
even for the 100 ft. to be in
the valley bottom, like the
rest in the lower parts of
all valleys, as now we are
below the alluvial gravel and
drift; so that, for many
millenniums, erosion has
ceased. Not a particle of deep-
ening has taken place in this
valley since the Glacial
epoch - 7500 years ago. All the
valley deepening took place before

30
Add 5000 to 7500, and the
sum, 16000 years, is not
nearly so approximate to the time
the must have elapsed, since
this rock was a river bed.
As I stand on these hills and
look off into the valley of the
Llanos, I see, about 20
miles wide, and at least
300 feet deep, and then take
the insignificant stream
now flowing along the valley
bed, and note that it is only
there for four miles to its head,
and therefore must always have
been comparatively small,
my mind leaps back into
the millions, since the water
began to run along this chan-
nel towards the Carboniferous
sea! Then those Postage
Industries and Kansas Shales were
washed away to form Carboniferous
valleys and Shales.

At the same time, on the west side a stream was running north, and in time a deeper and much narrower channel for the Onondaga River.

That this stream has always run north, by since the great divide is not from the fall, now covered with drift, to the depth of 600 or more feet, looking north down that valley.

Water running north only would have cut Onondaga River Valley.

Since the Onondaga heads here in several small streams, running south, it must have always run south, since the uplift. Hence, therefore, has always been the water divide, since it was first made dryland.

Trully, Oregon Co., N. B.
Saturday, September 8, 1884.
It rains all the forenoon.
In the afternoon, I ride along
the west side of this valley,
and determine where the
Trully limestone dips beneath
the surface of the valley.
It is in the town of Proctor.
Portland Co., about one
mile from the county
line.

Directly across the valley,
on the east side, Trully
limestone is fully 75 feet
higher than the surface of
Big Lake. This shows a
southwestern dip, strong.
Mr. Cummings' Spring
comes out on the top of the
Trully. It is a pure hard water.
The top of the rock is more
than 100 feet above the lake.
The road which is 20 feet above

July, 1907, 35
Monday, September 10, 1907.
I visit Otisco Valley, today.
At Ft. Hamilton, N.Y.,
the Clinton Shales dip to S.
After leaving the fort, I cross
where can July Limestone,
until I crossed it, a short
distance south of Round Lake County,
south line in the field
where it is about 20 feet above
Big Lake. On the west side
of ridge, there the road enters
the gorge to pass into the July
Limestone is below the road,
and the gorge is entirely
Glenkill Shales and the top
Shales. This corresponds
with the fact that it is the
below Livingstone Valley on
the west side, a short
distance below Big Lake;
while, on the east side, it

sinks to the valley surface
a little north of Homer.

It does not come to the
surface along the road
from Vesper to Homer,
on account of the heavy
drift. It is in all the
lateral gorges from about
a mile south of the head
of Otisco to the mouth
the first gorge north
of the road that joins
the ridge to Tanglewings
Valley, where it breaks into
the drift. In crossing here
from Otisco Valley to Tanglewings
Valley, I find it fairly exposed
on the side of the ridge, west
side of Tanglewings Valley.
fully this to the west side of the ridge.

This shows dip S. W.

Friday, November 11, 1898
Tuesday, September 11, 1898
Today, I gather specimens
in the road east of John
Crusby's, till noon. 1200 ft
In the afternoon, I trace
the outcroppings south
from Crusby's to the
junction of the valley. It is
still pretty far up
above the valley.
It is more or less exposed
at every gorge.

At Meigsport is one
of the best I have seen.
On the east side, this rock
seems peculiarly hard.
At Meigsport the top of the
cave is 41 feet above the
valley floor.

Section of the Falls in

the woods east of the house

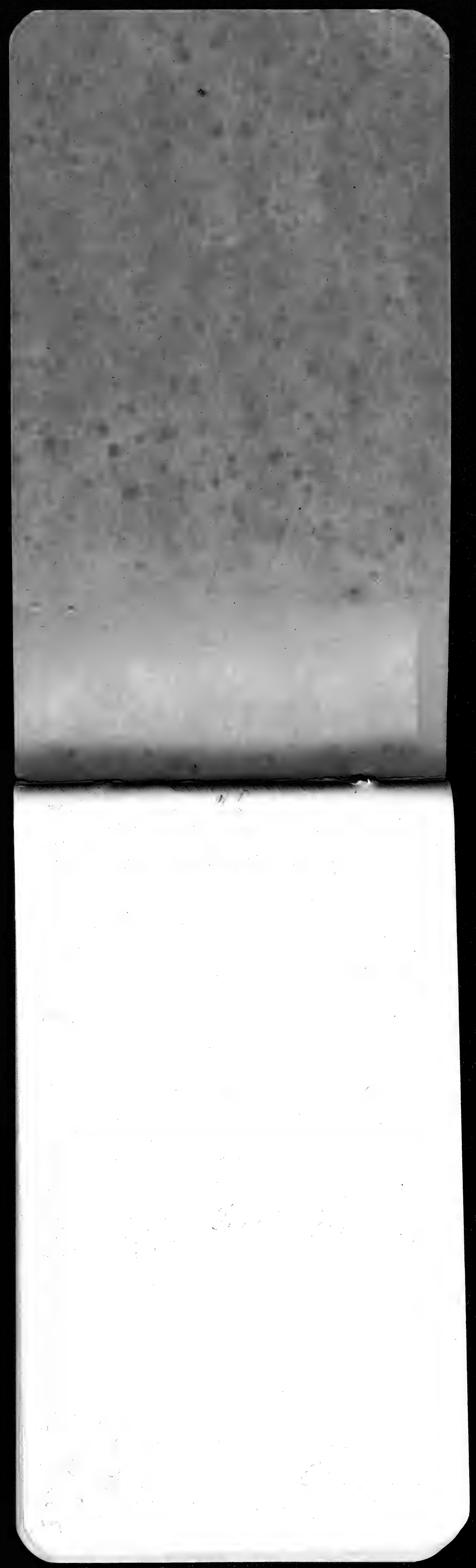
- 1- 6 feet fall from the top of the falls proper to the spring
- 2- 15 feet from the base of the falls to the top of the falls
- 3- 3 feet from base of the falls to the top - Greenish Shale about 5 feet at top of the falls

A thin stratum of Argillite seen in the falls, about 50 feet several of the strata have seen the same of Argillite, which

There

There is a small hole in the ground from 3 inches to six feet

The above is the part of the channel by which the water flows from the spring to the falls, and is a channel in very soft rock, probably, a little from the exact neck of a hill with a graduated slope not very steep: but it is very much correct.



37
Seneca Shale comes down
flush to the road, no Tully
limestone appearing.

Then the limestone rises,
and, though uneven, runs
along the base of the hill
as far as I have seen.

All this appears on
the east side and not
on the west side of the
Tionghonoga Valley, shows
a southwesterly dip.

At Wainwright's, Field No.
1205, I made a fair collection
this afternoon.

The best for collecting is from the
hill side, facing the valley
highway.

G. C. and Holmes farm is part of
Lot 55, Probel, Cortland Co., N.Y.

Wainwright's farm is part of
Lot 57, Probel, Cortland Co., N.Y.

Tully, Onondaga Co. N. Y.
Friday, September 18, 1887

P. M. Specimens in the
Afternoon, I visited again
the falls in the Chase woods.

I determined the following:

- 1. From Tully to the foot of the falls 65
- 2. Fall in Hamilton Co. 15
- 3. Tully limestone 27
- 4. Calcareous Argillite 7

This Calcareous ^{Argillite} is entirely
different from the Genesee
Shale - Argillite.

It maintains its form and size
after the deposition of the
Calcareous layer. It splits
into slabs 1 to 2 inches
in thickness very fine.

Genesee Argillite splits into
flakes very small and light.
The Calcareous Argillite is
very dark blue color. The

Argillite is ³⁹black - no blue
shade at all. sometimes a
little rusty.

I have not the least hesitating
in returning the former
name to the *Trilobites*.

The truth is, the Calcareous
matter began to fail, towards
the last of the *Trilobites* period,
while the Argillaceous
element continued in
full force.

In several thin seams,
it was in excess, during
the solidification, or
rather precipitation of
the Calcareous element.

The introduction of the
Calcareous ~~epoch~~ epoch above
the Hamilton was comparatively
sudden - No more than six
inches of Argillaceous Limestone

was made at the bottom of
the rock - top of Hamilton
Shale; and, as appears from
my specimens, Hamilton
Fossils continued flush
up to the introduction
of the Calcareous Matter.

This is as it should be.
When the water became
so strongly impregnated
with this matter, the former
fauna would not find
it healthy - must die.
The source of this lime
is a mystery.

41.

41
No. 1, Onondaga Co. N. Y. -
Friday, 2 - m., Sept 11, 1881. Saw no
Pimpla tricolor or sp. -
But a good lot of sp. in

In the p.m., I visited a
fall, east of Herington,
on the western side of the
Big Horn. It was in the
valley. In the morning
reaching it, I found the
Shoshone in front of me
the fall. I found the
I am the first to see
Portage Sandstone!

Mr King has very thoughtfully
read Laman; but reading can
not inform a man how to dis-
tinguish a rock by its appearance.
Observation being the question
can do this.

59, Preble, Colorado, U.S.A.

42-

List of ^{quarters} of Tubby
 Limestone, in Tubby Township
 Beginning at Vespera Haven
 and along the west side of the
 Valley to the ^{first} ^{place} ^{where} ^{the} ^{road} ^{crosses} ^{the} ^{river}
 just east of Tubby, the latter, in
 Lot 39.

At Gardiner's, in Lot 39.
 In the ridge north, in Lot 39 & 40
 10. On Lots 13 & 20. Well 714
 274 304 50

On the west side the latter are
 26, 27, & 28 & 29
 In Otisco, the Lots are
 55, on Bear River ridge top
 56, 57 & 58.

And along Otisco Valley
 in all the ravines south of the
 Reservoir to the Gulf road
 down into Peble, Thompson's
 Valley.

In La Fayette, in Lots
 59, 60, 61, 62

In Peble, in Lots 63, 64, 65,
 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

July, Quindaga Co., N. Y.
Saturday, Sept. 12, 1880.

Today I have examined the hills east from Oneida.
Thence north to Summit Station.
From Oneida northward, the Valley rises up fast north to the
Limestone; so that at the same
station does not appear from
the ridge west of the valley,
it is all one ridge.

In the ridge north of
Apulia, it does not exist.
Taking a level from the
James Hill M. Hill to the
I find the level to be constant
its existence; but it does
not. This coincides with
the theory of a south-west dip
at this meridian.

44

Monday, September 17, 1884

I gather Specimens until
the rain becomes too
at 1204 A, Lot 25, Lilly.

Lilly, Onondaga Co. N. Y.

Tuesday, September 18, 1884

Rain during all the morn., and until
12 p.m.

At 2 p.m., I go down to the
parties to gather fossils, rocks.

I also determine the elevation
of this rock above the Niagara
Valley, at the County
Line, on the west side. It
is fully 100 feet above

the valley road, and more
than 50 feet above surface of
the lake, just west of the

road. Below this outcrop
it is covered by drift that

its position is determined by

taking the exceedingly gradual depression of the rock for the last 2 1/2 miles with one thin side, as the proper term of comparison. I do not think it compares the level of the Valley in the next four miles southward down the Valley.

On page 50 I have given a careful examination and account of the Gully formed at this place, which was

46

July, 1888
Monday, Sept. 11, 1888
Gather fossils, today, from the
ledge west of Longhinoza.
1204 A, lot 27. 2. 1888
I take the height of that ledge above
the road to be about 95 feet.
I find, at the top of Section A,
a calcareous sandy shale, 10 inches
thick. Some parts of this are
very full of fossils.
The top of this ledge is about
50 feet above the Longhinoza
below the mountain is a
level east to the east, a view
Longhinoza Valley, shows
quite the same height as
the opposite at Cusby's

47
Jully, Onondaga Co., N. Y.
Thursday, Sept. 29, 1888.
I inspected the outcroppings
of July, Limestone along the
east face of Section 4, and
and find outcroppings Lots
34²⁰ and 10, July, and Lot 10²⁰
Lafayette, Onondaga Co., N. Y.
Collected fossils from
12054, Lot 34, July, and
from 12056, Lot 10²⁰ Lafayette.
There are several outcrops
along this face of the hill,
and the "Limestone" termina-
tes on the north face of
the ridge, Lot 10²⁰, Lafayette.
There is much drift here, and
a good deal of debris.
Limestone: but July, Limestone
can easily be distinguished
from all others.

48.

A level, due east, passes high
over the next ridge — the one
north of Apulona, but it strikes
the top of the ridge east of
Fabius. I shall, therefore,
look for its outcropping there.

N.B. I found this outcrop,
Hummus, Sept. 2^d inst.

See page 54.

49

Lilly, Onondaga Co. N.Y.
Friday, September 21, 1895

I examined the *Amphipoda*
Valley on both sides today.
To determine where the
Lilly is a steep dip
beneath the surface of
the valley.

On the west side it comes
down to the valley at about
the line between the
74 & 75 lots.

On the east side, it
comes to the valley about
half a mile below

Talman's Sawmill.
In Lot 75, over two miles
further south than it
does on the west side.
This shows, conclusively
that the dip is southward.

50.

I find, on careful examination of the exposures near the County line between Lot 4th, Tully, and Lot 5th, Brady, the most complete exhibition of the rock, I have yet anywhere seen, and, by careful leveling, I find 58 feet of rock in the bed, at the base of the latter creek, at the spring below the bridge, to the top of the calcareous Argillite in the second lot upstream.

I made it 63 feet, at the fall east of the old Chase Saw Mill, Lot 29, Tully, 3 1/2 miles north east.

My measurements exceed any others, heretofore published, but I know they are correct.

51-

Nowhere else have I found
so perfect an exposure of
the junction between the
Lilly, Pacific and Agillite
and the Transverse Shale,
as is here presented.

The junction between the
Lilly, Limestone base and
the Hamilton Shale is
well presented at the fall
above named, and in
two places along the Garrett's
L. exposure.

Now I have the connection
all complete - remarkably
link in the chain.

52.

Lilly, O. orange Co., N.H.
Saturday, September 24, 1894
We had a visit from the family
in the town of T. in the
North and the 1000 ft. road
south of the north family
the town beyond the county
and 1000 ft. higher than the
road, but by a small
This road falls into a
small stream just west
of the outlet of Lake Umbagog
Lake or Pond.

From the bridge on the
road across the stream
to a more elevated point
the road at the station
the altitude is 145 feet,
the entire thickness of
the Lilly Thompson
house.

I observed also the
appearance of the road

July. 52

Monday, September 24, 1888

Today, I visited Limekiln Falls
for further examination
and the collection of fossils.

I find the thickness of the
Lilly Group to be as follows:

- | | |
|-----------------------------|----|
| 1. A doubtful Shale at base | 5 |
| 2. Limestones proper | 50 |
| 3. Blue tabular Argillite | 5 |
| | 65 |
| Total | |

This is Station 2074, Lat-
53, Longitude, Portland, Me.

Fossils are very abundant in
this place. We found more
than in any other place
I have yet visited.

The limestone, however,
contains but a few fossils.
Shale-tabular Argillite.
These are fossils, fossils.

1207A

In the double bed I've
just been the line above

1207B

A few feet above the bed
above the water level
in a shaly stratum under
a hard shelf

53-

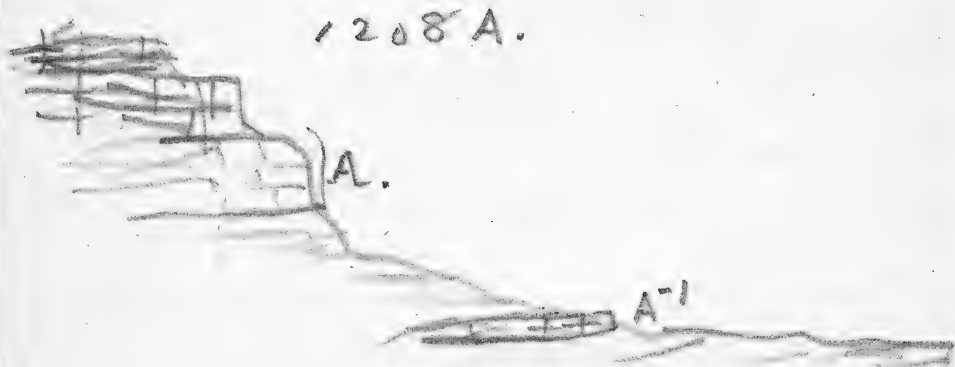
Early morning, at the
head of the lake, about 1000
feet above the water level, the
line of the lake is visible
in the distance of Submarine
Bank.

At the north end of the range,
it is about 1000 feet above the
lake level, but again it is
about 2000 feet above the lake level
at the north end, for several
miles, it is about 2000 feet, about
200 feet above the lake level, and
it is about 1000 feet lower
for the two miles along which
I took note of the line.

At the first small run, I
made a collection, at station
1207B, lot 42, Fabius.

I made a still further col-
lection from the line above,
1207A, lot 53, further.

1208 A.



54.

Tully, Oswego Co., N. Y.,
 Thursday, September 27, 1884.
 I visit an outcrop of Tully
 Limestone, Lot 54, Tullytown,
 Crossland Co., N. Y., Station
 1208 A. 1/2 mile east of Tullytown.

The Tully Limestone is
 exposed in the bed of a small
 creek, for a long distance.

I had some very fine specimens
 of the best I have yet
 obtained.

I drove from 59 Tullytown,
 through 44, Fabius. On this
 lot, the road passes over the
 Limestone at a spring or
 in a trough, and on the east
 side of the road is a fall.
 There is also a fall 400 yds
 east of the house and
 spring in a gorge.

The Limestone comes to the
 north end of the village, south
 of the house.

Quincy, N.Y.

Saturday, September 23, 1882

I collect specimens again
at Lin Ker's Falls, Lot 5-2,
"Troyton, Westland Co., N.Y.
Station 1207 A. I find
some hitherto unknown
specimens of *L. p. laticornis*.
This lead fills my sack
box.

1210

55

Dr. Taylor, Pennsylvania
Friday, October 5, 1904

This forenoon, I have found
the fully exposed, on Lots
52 and 53, Township of
Iron-plate Taylor, on both
sides of the Valley of East
Branch, Hampshire Co., W. Va.
On the north side is the
southern edge of a table
the northern edge of
which seems to be the same
some miles north of this.
That on the south side
is the northern edge of
a table that, dipping toward
the southern hills, disap-
pears to a sharp narrow
unless among some of the
Pennsylvanian Table is
possibility which seems

57-

nowhere near as good, or at
least, not recognized.

This same fact is reported
to me as existing at Inyokern?
if so, then we have here the
southern limit well defined
by this valley. I shall call this
this point, right away.

Tracing the valley of the
river to the west, we find
the same conditions as
the first valley. The
same is the case of the
plateau, in fact, along the
face of the hills.

Along this table, I found
this is the first exposure of
my first day's work at
Inyokern. Station 100 ft.
The entire thickness of the
exposure, on lot 524⁵⁷ is
about 40 feet. The base is

582

tops are not well defined, in
either case.

more, no person thought
have hit the two found in
Station ^{17.10} ~~the~~ is on Lot 15

59

Whiptail, Madison Co. N.Y.
Monday, October 8, 1900

This forenoon, I have
identified the Lilly Group
in a gorge on Lot 20, 35
Berkeley, Madison Co.
It forms the top of a series
of cascades, the bottom
being, however, in the
Hamilton Shale.

From my observations on
this hill, I am convinced
that the Lilly also underlies
the next hill south of
this one. ~~12/11~~ 12/11

at Dayton, Ohio, on Dec. 4th.
Wednesday, Dec. 5th, 1877.
I go to Dayton, Ohio, and
I find the following fossils on the
538 & 59, Dayton. 1211, 1212
This is very shaly, brown
so that I have before any
where seen.

It is a good place for
collecting fossils.
The line of contact is
all along on the north
side of the valley, and
the south side, the line
is well enough marked,
but it is entirely masked
by the vast amount of
drift. Some of the south

Spring rivulets run below
the bridge.

$\frac{3}{4}$ of a mile N. N. W. of the
village of Templeton is
^{Spring} Cottage Poles. There is a
fall over the Tully, S. W.
Group, very similar to
Lincoln Falls. It is a
somewhat larger stream
than that of Lincoln Falls.
This is a good place
for collecting.

Station 121st Lot 26
I obtained a fine slab from
the lowest shale showing
Hamilton Fossils.

Gettysburg, Madison Co., N.Y.,
Thursday, October 11, 1855.
I revisit Spicard's Cove
and make fine collections.
I take the height of the
fall from the corner
of the main road -
equal to 100 ft. & 1/2;
to the bottom of limestone
just fifty feet, having
just fifty - 50 ft. & 1/2 of
the limestone without
the double bed shale at
the bottom or any of
the Calcareous Argillite
& below, which is not ex-
hibited.

I have a promising prospect
that other localities
have found so little
typical in this group.
I have been correct.

San Diego, California, U.S.A.
Saturday, October 13, 1906.
Today, during the morning
I have visited along the line of
outcrops on the west side of the
valley north of San Diego.

I found a good exposure in
a gorge on the east face of the
hill, lot 6 or 7, San Diego, California.
The wall here rises vertically
for many feet. It is from 12 to 15 ft.
I have found a number of
ridges in the face of the wall,
about mid-way. The exposure
here is about 100 ft.

Next is a gorge on lot 5 or 6.
San Diego, California.
I did not go to this exposure
there.

The next is on lot 4, San Diego,
California.
This I visited. This is the
largest exposure I have
yet seen. I had not

54
time to take the thin pieces;
but I estimate it at least
70 feet. Station 1214.

The Calcareous Argillite
is not here by itself, but I
found loose pieces of it in
the stream above the table.
This limestone, the upper
10 feet, I was given for
building the Massena dam.
Above Pickett's house
at the south, on Lot 20,
Fabius, is another good
exposure. This is a gorge on
the north end of the long
ridge which faces the valley
north of Dr. Taylor, from
Lot 59, Taylor, to Lot 20, Fabius,
a distance of six miles.

The road up the hill, at the
west of Pickett's house crosses
the line of outcrops about
one mile southwest of

Pickett's house. The upper
part of the light here. The
immediately find ourselves
ascending the hill over the
fine Pennsylvanian Shales.

From the Pickett hill we
pass on lot 20, Tabernash,
to lot 42, Tabernash, called
Sabradore Hill, south of
Summit Station, on the
Birmingham and Wyandotte
R.R., there is a series of
hills, all terminating at
the north, looking down
into a transverse valley,
between them the Porcupine
Hills. Every one of these
hills, between 42 & 40, has a
line of outcrop & runs into
north end. On some of
them, the limestone forms
tables. Then, between every
two of these ridges are two
lines of outcrop running south.

There at the Cedar River,
line runs on both the west
and the east sides.

In the valley running north
from Beattyton the two
lines are as they should
be; but the east line turns
northeast along the upper
part of the E. north branch
of "Longhorns"; but the
hill that runs parallel
with Beattyton Reservoir
is too low. It is a valley
in Hamilton Chert.

So much I have today
determined. The geology
is very simple and
it seems to me "little strange"
that Geologists have failed
to discover what is so
exceedingly plain.

Portage Shales.

Upper Falls
Genesee

Portage Sandstone
Shale.

High banks of
Genesee Shale.

Tully Limestone begins.

63 feet

15 feet

Falls.
Hamilton Shales begin.

From the mouth of the branch

To the top of the Tully Group is
140 feet, viz, 62 feet to the foot of the
Fall - { 15 feet fall in the shale.
63 feet fall in the limestone.
140

62 feet

Upper Falls.

Falls.

Tully Limestone

Chase Sandstone
Small lateral moraine.

Chase of Tully group
within from Tully.

Tully

Section Tulby Limestone

Calcareous Argillite.
Argillaceous Limestone.

Solid Limestone with
thin seams of Argillite.

= Thin seam of Argillaceous
Limestone.

There are several fossiliferous Strata of these Limestones, but, to make them available, they need a long exposure to the influences of varying temperature and moisture. Some of the Argillites easily yield fossils.

Hence, from this Limestone in situ it is almost impossible to obtain a single fossil. From loose fragments, any amount may be obtained. In order to determine the horizon of a fossil, it is necessary to study closely the Lithology of the rocks in situ, and then compare the loose fragments.

De Buyer, Harrison Co., N.Y.
Monday, October 15, 1894
This morning, I have discovered
that Lully Group lies from
5 to 8 feet beneath the surface
in all the north part of the
village of ^{Station 1208} ~~De Buyer~~, Harrison Co.
This is at the mouth of Lully
Creek. Here, therefore, the
two lines of exposure, one on
each side of this stream,
join so as to complete the
southern loop. ^{Station 1215 all along}
^{up the north side of the valley to Caylenville.}
As I returned toward Caylenville,
it rises higher and higher.
Till I reach Spitzer's Bend.
At this place I find the exposure
of the entire upper part of the
Calcareous Argillite, which
gives 53 feet of thickness, with
the 5 feet of doubtful shale at
the bottom, adding that I get
68 feet, the thickest I have

68-

yet ~~found~~ measured. I think the exposure on Lot 30, Fabins, west of the Reservoir Dam, is heavier than this. These two are a little over 7 miles apart, and Linker's Falls is 7 miles northwest of Spicer's Glen.

At the stream, near the southeast corner of Lot 85, Cuyler, I discovered a table of this Limestone, which exhibits, most beautifully, the Life of its day. It is too large to manage, but it is a splendidly instructive lesson, in the Hieroglyphs of the ancient seas. I could study it a month, without exhaustion — Trilobites of numerous species, Shells and tracks. This is well up in the Group.

At Cuylerville, I find
the Group outcropping, on
the south side of Tioga-
nioga Valley, south and
southwest of the village,
nearly or quite 100 feet
above the river-bed.

This gives me the 'miss-
ing link', on the south
side of the valley, from
Burdick's Glen, above DeCuyler,
southeast, to Cuylerville.

I have not, before, been able to
find the line, though I knew
it must be there. The drift
is very heavy, and no stream,
from Burdick's to that at Cuylerville,
is heavy enough to cut down to
the bed-rock.

In the stream, at Cuylerville,
I found the Hamilton Shale,
upper part, and I instantly knew
that the Tully Group must be
exposed. I took the first
lateral branch from the west,
and, in a few rods, I found it,
southwest of the depot,
about 80 rods - bottom of
the group. 1216 Station.
I then took a level from
that position, southeast, up
the main run; and I found
that it reaches the stream,
half a mile away in that
direction.
There it disappears beneath
the Southern hills.

Here I close this book
and open Book B.

